

IN THE SPECIFICATION:

Please amend the first full paragraph appearing on page 2 as follows:

~~Cross Reference to Related Application:~~ Cross-Reference to Related Application: This application is a divisional of application Serial No. 08/800,841, filed February 14, 1997, now United States Patent No. 6,097,098, issued August 1, 2000.

Please amend the first full paragraph appearing on page 3 as follows:

Another wire bonding application may include chip-on-board (COB), where the back-side surface of a bare IC die is directly mounted on the surface of a substantially rigid printed circuit board (PCB) or other carrier substrate, and bond pads on the ~~front-side~~ front-side or active surface of the bare die are then wire bonded to wire bondable trace pads or terminals on the surface of the PCB to interconnect circuitry in the die with external circuitry through conductive traces on the PCB. Likewise, wire bondable traces may be formed from a metal film carried on a flexible polyimide or other dielectric film or sheet similar to those employed in so-called TAB (tape automated bonding) lead frame structures. A die may be back-mounted on the flex circuit and the traces wire bonded to bond pads on the surface of the die.

Please amend the eleventh full paragraph appearing on page 7 as follows:

FIG. 6B is a cross-sectional side view ~~of an~~ of a ninth embodiment of a semiconductor device in accordance with the present invention;

Please amend the paragraph bridging pages 9 and 10 as follows:

FIG. 3 illustrates yet another preferred embodiment of a semiconductor device 40 according to the present invention in which an adapter 46 converts a peripherally bond padded semiconductor die 42 to a device 40 bearing jumper pads 220. The semiconductor die 42 includes bond pads 216 which have been ~~“bumped;”~~ “bumped”; that is, balls or bumps 44 of gold, solder or conductive adhesive have been attached thereto. An adapter 46 configured to

mate with the active surface 214 and bond pads 216 of the die 42 is comprised of a support structure 48, which may be formed of a sheet-like structure, such as Kapton® or other tape as used in tape automated bonding, or a more rigid structure formed from ceramic, silicon, FR-4 or other materials known in the art. Preferably, the adapter 46 is formed from a material having a coefficient of thermal expansion (CTE) substantially matching the CTE of the die 42. The adapter 46 includes a plurality of first contact pads 50 on a top surface 52 thereof and a plurality of second contact pads 54 proximate a bottom surface 56 thereof. The first contact pads 50 are electrically connected to the second contact pads 54 by conductive contacts or vias 58 that extend to and between the first and second contact pads 50 and 54, respectively, and are contained within the support structure 48. The second contact pads 54 are arranged to match the arrangement of bumped bond pads 216. Thus, when the adapter 46 and die 42 are brought together and mutually secured by adhesive 57, the second contact pads 54 mate with the bumped pads 216. As further illustrated in FIG. 3A, the assembled semiconductor device 40 may be dipped or coated with a protective layer 59 of, for example, epoxy or silicon gel to protect and insulate the adapter 46 and the die 42, and the first contact pads 50 may be bumped so that the conductive bumps 61 extend above the protective layer 59 for flip-chip connection to a carrier substrate. In such an arrangement, short conductive traces formed on the carrier substrate would extend between jumper pads 220 and first contact pads 50 to be connected, between a series of jumper pads 220, between a contact pad 50 and an external circuit trace, etc. Alternatively, and as more fully described with respect to FIG. 6, rerouting circuitry may be carried within adapter 46 to reroute a bond pad 216 to a new location of a contact pad 50. It is also an option to employ adapter 46 only as an interposer substrate to provide for flip-chip connection of die 42 to a carrier substrate, omitting jumper pads 220 or any sort of bond pad rerouting capability.

Please amend the paragraph bridging pages 11 and 12 as follows:

In another preferred embodiment of the present invention shown in FIG. 6, a ~~tape-like~~ tape-like structure 110 may include its own internal circuitry or conductive lines 112 that connect jumper pads 520 to other jumper pads 520 and/or jumper pads 520 to bond

pads 516 which are located on an active surface 514 of a die 512, and which are covered by the tape-like structure 110. It is also contemplated, as further illustrated, that the present invention has equal utility for multiple dice 512 and 513 in the same package (such as in a multi-chip module, or MCM) where wire bonds 515 make die-to-die interconnections between jumper pads 521 and/or bond pad 516 between the dice 512 and 513, as well as those combinations described with reference to single die 70 of FIG. 4.